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| 09/819,053      | 05/20/2000  | Frank W. Ahern       | 101950-00027        | 9991             |

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EXAMINER

LEFKOWITZ, SUMATI

ART UNIT

PAPER NUMBER

2112

DATE MAILED: 04/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

**Application No.**

09/819,053

**Applicant(s)**

AHERN, FRANK W.

**Examiner**

Sumati Lefkowitz

**Art Unit**

2112

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 17 March 2004.  
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-5,7 and 8 is/are pending in the application.  
4a) Of the above claim(s) 9-23 is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-5,7 and 8 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☒ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☒ Interview Summary (PTO-413)  
Paper No(s)/Mail Date 8.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_

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### **DETAILED ACTION**

1. Claims 1-5 and 7-8 are pending. Claims 9-23 are being withdrawn as being directed to a non-elected invention.

#### ***Election/Restrictions***

2. Restriction to one of the following inventions is required under 35 U.S.C. 121:
- I. Claims 1-5 and 7-8, drawn to enabling communication between registers coupled across a serial link without caching, classified in class 710, subclass 306.
  - II. Claims 9-19, drawn to transferring data between a first device and a second device by mirroring data from one register to another, classified in class 710, subclass 306.
  - III. Claims 20-23, drawn to transferring data between a first integrated circuit and a second integrated circuit by way of a serial link, classified in class 710, subclass 306.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention II has separate utility such as in systems that do not transfer data by way of two serial links or in systems that require caching to transfer data. See MPEP § 806.05(d).

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Inventions I and III are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention III has separate utility such as in systems that do not transfer data by way of two serial links or in systems that require caching to transfer data. See MPEP § 806.05(d).

Inventions II and III are related as subcombinations disclosed as usable together in a single combination. The subcombinations are distinct from each other if they are shown to be separately usable. In the instant case, invention III has separate utility such as in systems that do not mirror data from one register to another. See MPEP § 806.05(d).

Because these inventions are distinct for the reasons given above and the search required for Group I is not required for Groups II or III and the search required for Group II is not required for Group III, restriction for examination purposes as indicated is proper.

During a telephone conversation with Robert C. Klinger (#34,365) on 3/18/04 a provisional election was made without traverse to prosecute the invention of Group I, claims 1-8. Affirmation of this election must be made by applicant in replying to this Office action. Claims 9-23 withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

### *Specification*

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

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4. The abstract of the disclosure is objected to because it fails to describe the claimed invention, i.e., that two serial links are coupled between registers contained within first and second integrated circuits comprising a bridge

Correction is required. See MPEP § 608.01(b).

***Claim Rejections - 35 USC § 112***

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 7 and 8 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- a. As to claim 7, “the primary bus”, “the first register”, “the second register”, and “the second integrated circuit” lack antecedent basis
- b. As to claim 8, “the secondary bus”, “the third register”, and “the fourth register” lack antecedent basis

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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8. Claims 1, 2, 4, 5, 7, and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Hong, 5,764,924.

a. As to claims 1, 2, 4, 5, 7, and 8, Hong discloses a system for enabling device communication in an expanded computing device comprising a primary bus (note Figure 2, bus 158) coupled to a first IC (note Figure 2, local serial bridge 104) having a first register and a second register (i.e., wherein registers or buffers coupled at both ends of the redundant, unidirectional serial links 108 and 110 going in the direction from the local serial bridge to the remote serial bridge, with at least one register coupled at each end of each unidirectional link, are inherent to allow unidirectional data transfer along the links from the local serial bridge to the remote serial bridge), a secondary bus (note Figure 2, bus 160) physically remote from the primary bus coupled to a second IC (note Figure 2, remote serial bridge 114) having a third register and a fourth register (i.e., wherein registers or buffers coupled at both ends of the redundant, unidirectional serial links 108 and 110 going in the direction from the remote serial bridge to the local serial bridge, with at least one register coupled at each end of each unidirectional link, are inherent to allow unidirectional data transfer along the links from the remote serial bridge to the local serial bridge), a first serial link (note Figure 2, unidirectional links from local serial bridge to remote serial bridge) coupled between the first register and the third register, a second serial link (note Figure 2, unidirectional links from remote serial bridge to local serial bridge) coupled between the second register and the fourth register, wherein the first IC is configured to enable the transfer of data to the second IC without using caching (i.e., wherein since the specification is silent as to the use of caching during data transfer long the serial links between the local serial bridge and the remote serial bridge, it meets the limitations of

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transferring data without using caching), wherein the first IC is an ASIC (note column 3, lines 2-15), wherein the second IC is adapted to transfer data to the first IC without using caching (i.e., wherein since the specification is silent as to the use of caching during data transfer long the serial links between the local serial bridge and the remote serial bridge, it meets the limitations of transferring data without using caching), and also discloses an interface (note Figure 1, elements 107,104,114) comprising an interface adapted to interface parallel data from a parallel data bus (Note Figure 2, bus 106) to a first bus (note Figure 2, bus 158) and a module (note Figure 2, local serial bridge 104) adapted to interface parallel data from the parallel data bus into serial data adapted to interface with a second remote bus (note Figure 2, bus 160), the module converting the parallel data to serial data without using caching, further comprising a first interface, the first interface configured to determine if a pending address provided thereto represents a transaction to be communicated to the second.

### ***Claim Rejections - 35 USC § 103***

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hong, 5,764,924 in view of Drott et al., 6,333,929 (hereinafter Drott).

Hong fails to disclose that the first interface is adapted to send a tag to the second interface indicative of a bus transaction type.

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Drottter discloses that a first bridge is adapted to send a tag (i.e., opcode) to a second bridge indicative of a bus transaction type (note abstract, column 2, lines 13-33, column 3, lines 6-17, column 14, line 22 – column 15, line 34).

It would have been obvious to one of ordinary skill in the art at the time of the invention to employ the use of a tag to send transaction type information from the first interface of Hong to the second interface of Hong, as Drottter teaches, so as to allow a distributed arrangement of host computers and I/O systems, providing the convenience of remote I/O access while maintaining compatibility with current commands, drivers, devices, and standards, as Drottter teaches in column 2, line 54 – column 3, line 5.

### *Conclusion*

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure, as the prior art teaches or suggests serially linked bridges or tagging transactions sent across a bridge to indicate transaction types.

|             |           |               |           |                |
|-------------|-----------|---------------|-----------|----------------|
| US Patents: | 6,425,033 | Conway et al. | 6,418,504 | Conway et al.  |
|             | 6,003,105 | Vicard et al. | 5,819,053 | Goodrum et al. |
|             | 5,802,055 | Krein et al.  |           |                |

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sumati Lefkowitz whose telephone number is 703-308-7790. The examiner can normally be reached on Monday-Friday from 6:00-2:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Rinehart can be reached at 703-305-4815.



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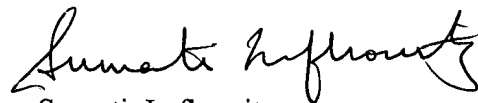
The fax phone numbers for the organization where this application or proceeding is assigned are:

703-746-7238 for After-Final communications

703-872-9306 for Official communications

703-746-5661 for Non-Official/Draft communications

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-305-3900.



Sumati Lefkowitz  
Primary Examiner  
Art Unit 2112

sl  
April 16, 2004